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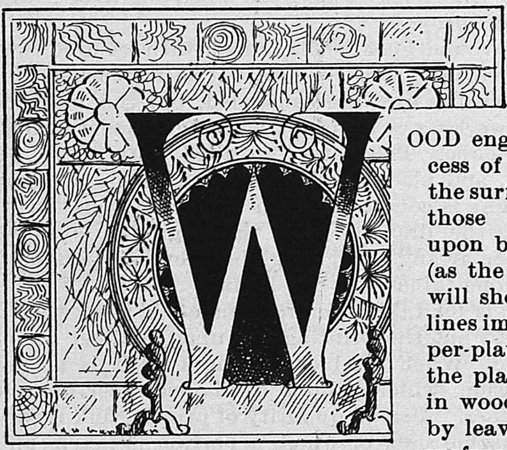
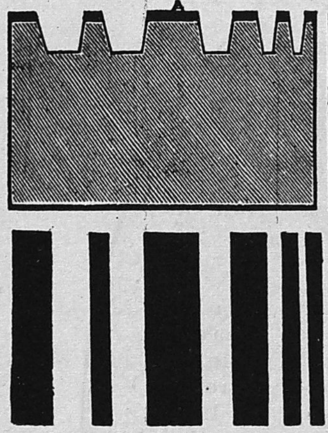
ENGRAVING ON WOOD.

THOMAS GILKS.



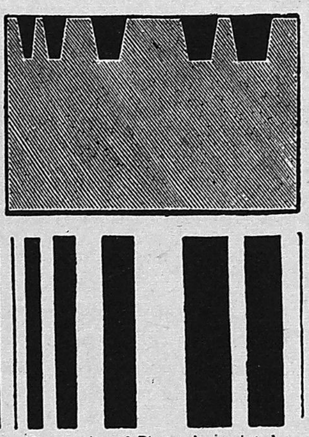
WOOD engraving is the process of cutting away from the surface of the wood all those parts not drawn upon by the artist: thus, (as the illustration Fig. 1 will show) while the black lines impressed by the copper-plate are engraved *in* the plate, the same result in wood would be effected by leaving the lines *on* its surface, by means of cutting away all the surrouning parts. As a consequence, an impression of each process is taken in an opposite way. In Fig. 2, the copper plate, the black spaces of section B show where the ink is rubbed into the plate. The copper is warmed before the ink is rubbed in, then the surface of the plate is wiped and polished; paper, or card is put on, and then pressed into the inked lines. In Fig. 1, the wood-cut, the black mark of section A shows the ink on the *surface* of the engraved parts, and the impression is taken in the contrary way to the plate. The *surface* of the wood, on the subject engraved is inked like ordinary type, by a roller, or dabber; and thus the surface of an unengraved block would be solid black, and this constitutes one of the greatest advantages of the Art, in the easy production of light and shade effects.

FIG. 1.
Section of Cut engraved.



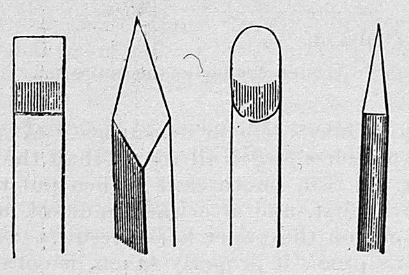
Impression of Cut when printed

FIG. 2.
Section of Plate engraved.



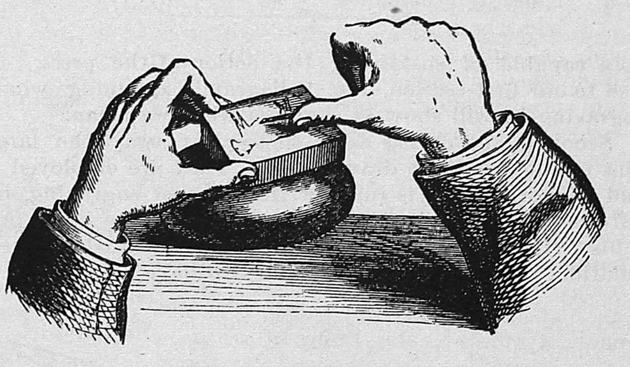
Impression of Plate when printed

The accompanying illustration of the mode of working at night, also shows the advantage to which we have incidentally referred, the easy mode by which a light and shade effect is produced. A subject may be defined, or drawn by a few touches of white on a dark ground; and if necessary the intermediate shade may be met, or relieved by a few white dots, or scratches with the graver, and thus a Rembrandt effect and picture may be produced in the shortest possible time. Several eminent modern artists (Gustave Doré for example) have produced some of their most forcible illustrations by this very simple mode. Wood engraving which attains its end by white lines on a black ground is not only most effective, but thoroughly honest in asserting its own method—relying on its own easy means of producing pictures.

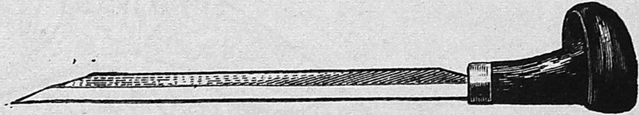


Chisels. Gravers. Scoopers. Tint Tools.

The tools and materials used in wood engraving are Sandbag, Gravers, Tint tools, Scoopers, Chisels, Eye-glass and Stand, Shade for the eyes, Globe for working at night, Burnisher for taking proofs, a Turkey stone, Grind-stone. Among the necessary requirements, if not actually a tool, is a sand-bag; that is a flat leather bag filled with sand, which forms a pad to rest the block upon, and enables the engraver to turn the block easily. This facility of turning the block is most important, as we shall presently see: the longer this sand-bag has been in use, the more convenient it is both to rest the block upon, and to turn it round. There are four kinds of cutting tools which our illustration will show better than we can describe. These several tools may, at the present day be purchased in handles ready for use, and various in size; and they may also be slightly modified by grinding in a way to which we shall shortly refer.



Mode of holding the Graver

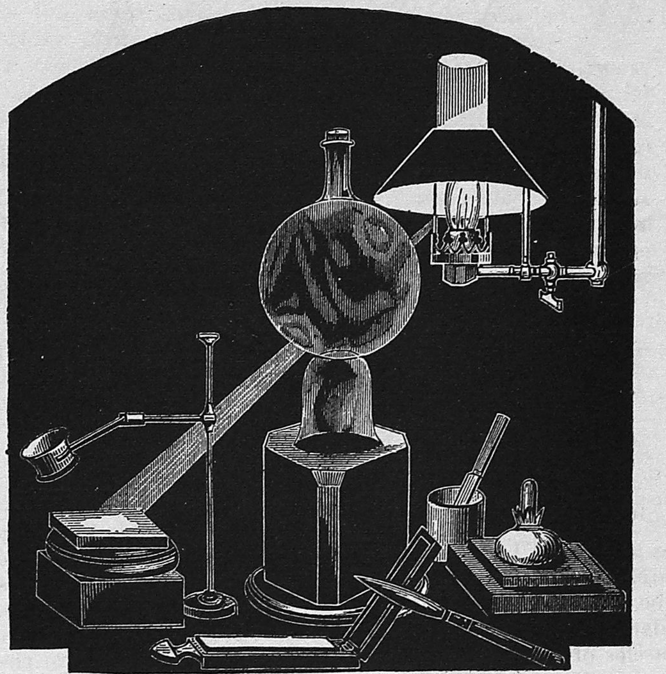


Graver in its handle ready for use

The illustration shows a graver ready for use. This tool is principally employed for outlining, or, going round each line the pencil has left, so as to keep the tints or shaded parts clear; or for separating one part from another. It ought to be kept so fine at the point, that the line it cuts is barely seen when the block is blacked for printing, as the intention of outlining is merely to make a boundary line. It will be found useful in ordinary work to have five or six of these gravers of different breadths at the point. Several of these may be purchased ready for use; when this cannot be satisfactorily done, the student may grind down the points for himself as they appear in the accompanying illustration.

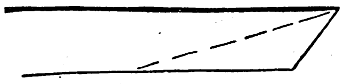
Different sized gravers are shown with the points ground down on an ordinary grind-stone, to make them broader. They must, before being used be slightly rounded on the Turkey stone, and thus be rendered serviceable for most kinds of work. The graver must never be pressed too deeply into the wood, as the width of the line cut is very much in proportion to this pressure of touch.

It will be found useful to have about the same number of tint tools as gravers, these tools may be widened according to circumstances in the same way as the gravers. Tint tools are chiefly used to cut parallel lines forming an even, or uniform tint. They are extensive in their combinations; most flat forms are worked by them, and for skies they are specially employed.



Block, sand-bag, and globe light, eye-glass and stand, oil-stone, dabber, burnisher, &c.

These tools are thinner at the back, but deeper in the side than gravers, and the angle of the face when properly ground, should be longer, to cut a good *even* tint. The dotted line of the cut will show the angle at which it should be ground, although, if too long it becomes weak in the back. It should be sufficiently strong in the back to prevent its bending in the middle of the blade when in use; a tool of this kind if weak cannot be guided, or kept under control, and thus much freedom of execution is lost. There is another advantage in thick tint tools, the raised lines are thicker at the bottom, and consequently more capable of sustaining the action of the press. A reference to our first section, Fig. 1 diagram, explaining what Wood Engraving is, will show at a glance what we mean.



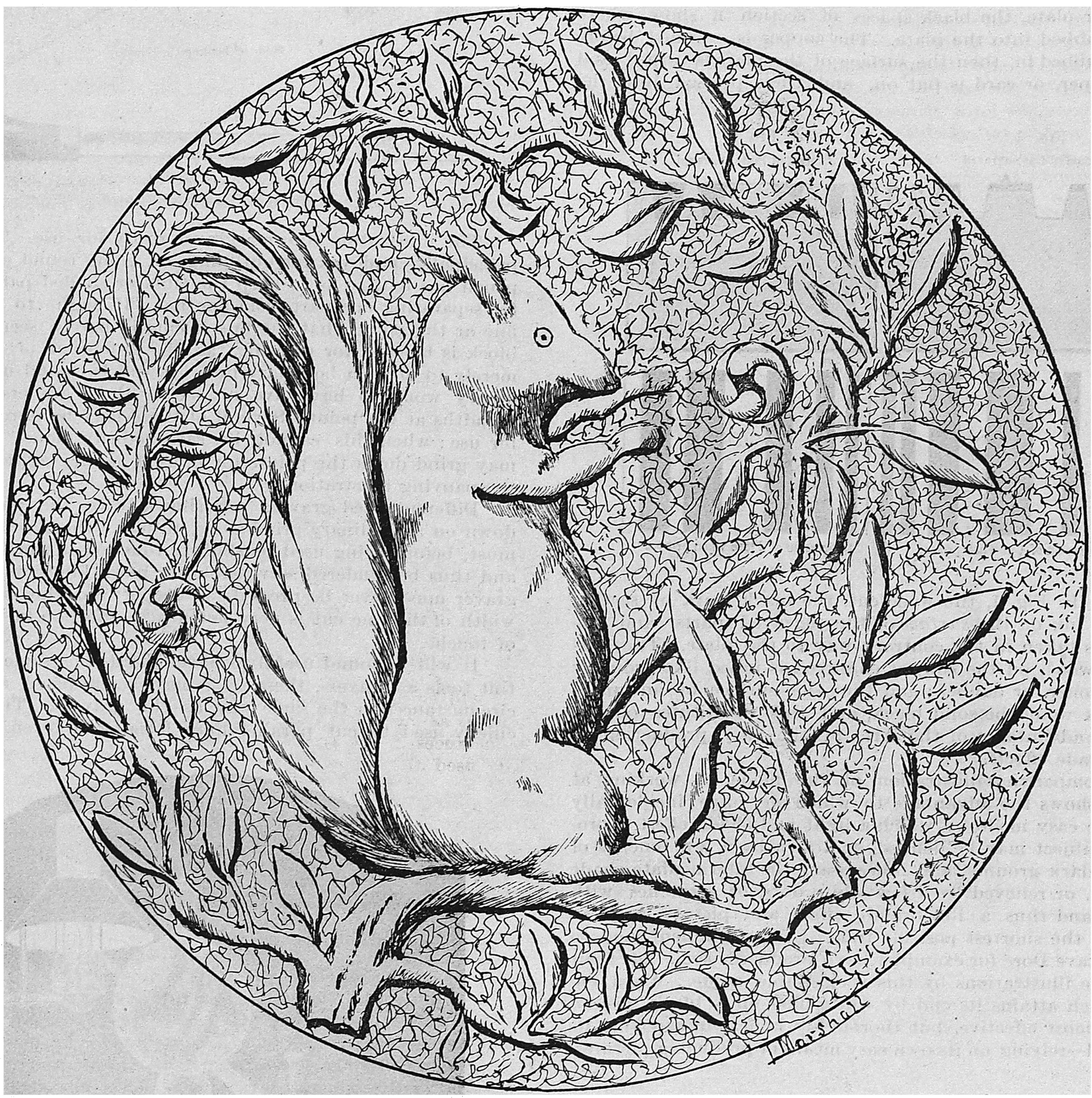
Scoopers and chisels are used to clear away the larger portions of the wood not drawn upon. They are employed for that kind of work which is rougher than proper engraving, but it is quite necessary to be able to use them. As the pupil progresses in his Art, and the drawings become complicated in their manipulation, it will be found necessary to have recourse to an eye-glass; but in the first or earlier stages, we would especially advise him not to strain the eye by its use. The kind of magnifying glass used by engravers is the same as that long used by watch-makers, which consists of a single lens fitted into a short tube, widened towards the end which is applied to the eye. In order to avoid the many inconveniences of a strain upon the muscles of the face by continuously holding the glass in the eye so as to leave both hands at liberty, a stand like that seen in one of our illustrations is convenient. It is made very cheaply, and it leaves both hands always free, the one (or left hand) to turn the block, and the other for the free use of the graver, and while objecting to the too early use of the eye-glass at all, there is one thing in which I would second Mr. John Jackson in his advice concerning the eyes, and that is to use a green shade over the eyes—he says. "All wood engravers, whether their eyes be weak or not, ought to wear a shade as it tends both to protect the eyes from too strong a glare, and also serves to concentrate the view on the work which the wood-engraver is at the time engaged in executing.

The globe is a round glass bottle, filled with colored water, similar to those seen in chemists' shops. It seems curious to say so in work in which the eyes are concerned, but the most comfortable mode of working is by night with the modern aids of gas-light and the globe. This latter is filled with clear water tinged with green, and placed under the gas in such a manner, that the ray of light is concentrated in a small focus on that uncovered part of the drawing that the engraver is at work upon. By a proper arrangement of globes several persons can work together at one table with one light.

The burnisher is for taking impressions of blocks when engraved: inkstone to put the printing ink upon: dabber to black the block with, etc. When the block is engraved it is necessary to take an impression, which is done by the engraver himself in the following manner. A small quantity of printing ink is rubbed upon a glass or marble slab, of which a portion is taken off on to a small dabber, and the subject engraved is dabbed till a sufficient quantity of ink is left on its surface. A piece of India paper about two inches larger all round than the cut is placed upon the block. A thin smoth card is then put upon that, and burnished all over first, and afterward in detail, until a fair impression of the cut on the paper is the result.

An engraver's proof, if properly taken, is considered superior to those taken at the press; but in the present day, when nearly all pressmen understand how to "bring up" wood cuts, there is not the difference that formerly existed between them; and this general improvement in printing has rendered the "lowering" of wood, and other requirements, almost unnecessary, having in a word quite simplified the practice of engraving upon wood.

A small grind-stone for taking down the rough edge of the tools, as well as a Turkey stone for finishing the point and fitting the tool for use may be said to sum up and complete the number of tools employed in the practice of the art. Who



NUT DISH IN REPOUSSÉE, BY LILY MARSHALL.

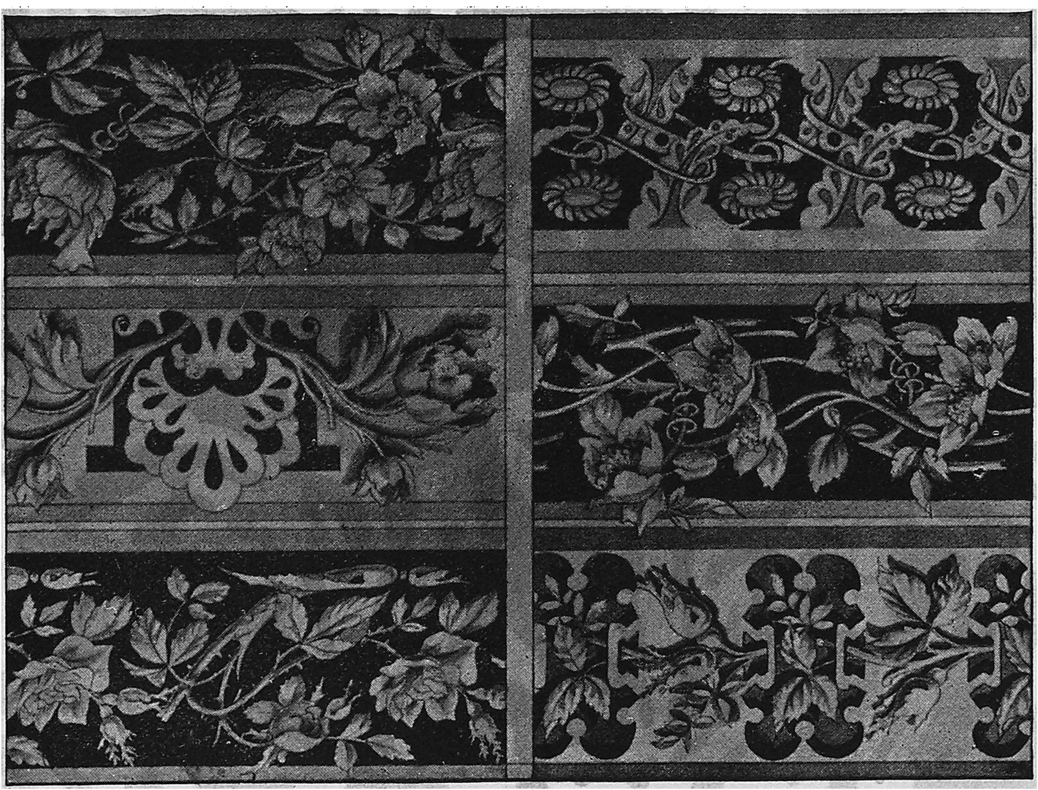
We have in preceding numbers given six designs for Nut Plates. The design above printed completes the entire set.

sets out wrong is more than half-undone"—it is therefore most important at the commencement of engraving to sit comfortably and straight at the table, and to hold the graver correctly. The block should be so placed on the table and on the sand-bag, that the pupil sits quite straight in front, and without having to stoop, (if this is not at the outset insisted upon, the seed of chest disease is immediately sown;) the block is then held, but not too tightly, with the thumb and forefinger of the left hand, while with the right hand the graver is held, the ball of the handle resting in the palm. The graver is then pressed forward with the thumb and fore-finger, the thumb resting against the side of the block (if a small one) or on the surface of a large block, and thus acting as a lever to the fingers in the graver's motion onwards, allowing it to move forward or backward with a very slight degree of pressure, and in the case of a tendency to slip being ever ready to check the graver's progress.

The accompanying illustration to show the mode of holding the tool, represents the thumb as a lever on the block.

The learner is now sitting at the table holding a block, which must have the required subject drawn upon it: and here we must be permitted to say that the learner will find his advance in the Art much facilitated if he can draw. Of course, at the present day, any kind of drawing may be made for the student better than he could do it for himself, but that is not the point; he that can draw, is able to understand the drawing that is placed in his hands to engrave—and thus fairly interprets the artist's meaning in his lines, while he that can *merely* engrave exactly a line as it is put for him, will very seldom, if at all, give the spirit of the artists meaning, as most drawings contain much that is suggestive.

The box-wood, as polished and prepared for the engraver, is too smooth to take the pencil with any effect. The preparation most in use to make it do so, is a very thin wash of Chinese white mixed with water and a small portion of common glue-powder. It must be laid on with a large flat brush very even and thin. When dry it forms a pale white coat on the surface of the wood, and a beautiful tooth for the working of the pencil. The powdered glue introduced will thoroughly *set* the preparation, and prevent the drawing from rubbing off: this is important to be observed, as many good drawings are practically valueless, if the preparation of the wood has been raw and unset.



Modern Floral Ornaments, by Carl Schofer, Buffalo, N. Y.

In the drawing on the wood, clearness and accuracy are most important. The following directions will be useful to be borne in mind. The subject to be drawn must be first carefully outlined on tracing paper, then a piece of prepared red paper must be placed with its red side next to the surface of the wood, and the traced drawing reverse from what it is to appear when printed, must be laid upon this red paper. The lines must then be retraced with a sharp point, and the result will be a clear *red* outline on the white ground of the wood. Go over this outline with a sharp pointed *four-H* pencil (specially prepared for the purpose), correcting as you go occasional inaccuracies of the tracing. The drawing may afterwards be filled in with a softer pencil work, according to the effect intended, carrying out the style and taste of the artist. If a dark effect of light and shade is required, then a thin wash of Indian ink may be gone over those parts most requiring color, and when that is thoroughly dry (not before), again go over it, perfecting the outline which may have got blunted by the wash, and then line over the ink shade according to taste, or the depth of color the effect of the subject requires. As we have before hinted, accuracy is *all important*, correct outline, therefore, in the drawing must be attended to, or, when the subject is engraved, all the faults will be more glaring. Many artists who can paint a good picture, or sketch well on paper, fail in making a drawing fitted for engraving, for want of attention to the above simple rules.

It is necessary to cover up all drawings on the wood during the process of engraving, so that the breath, or atmosphere generally may not damage that sharpness so necessary to be preserved all through the operation of cutting. For this cover, clean glazed paper may be used, though smooth blue paper is the best to reduce the glare. Cut it out about three-quarters of an inch larger all round than the size of the wood, and the edges of the wood having been previously rubbed over with ordinary beeswax, strain the paper cover tightly over. The cover is then opened where it is wished to commence the subject, which opening will be enlarged as required; but on no account ought the drawing to be much exposed. The parts engraved are all the better for being preserved by this cover from the pressure of the hand, which naturally tends to blunt any thin lines.

Many kinds of hard wood have been used in various periods of the history of the Art of Engraving upon Wood; but for several years it has been agreed that none will produce so fine and clear a line as box-wood. The log is cut up into slices a trifle thicker than the height of type (viz. one inch), it is then by means of planes and scrapers made very smooth, and gauged to the exact height of type, and thus fitted for the drawing to be made upon it. The largest and most useful wood comes from Turkey. The logs are sometimes from ten to twelve inches in diameter, but at the same time rarely free from flaws, splits, and bad parts; yet owing to the ingenuity of the modern box-wood preparer, hardly any portion of this, when cut up and joined is not made available for engraving purposes. The small wood, generally, is pretty free from blemishes, black or white spots, or what is equally as bad for engraving, red streaks, the wood of which is soft, and in our attempting to cut it, crumbles away. When polished and prepared for the engraver, (or rather for the draughtsman) wood is generally chosen by its appearance, the choice color being a pale yellow or straw color, and free from the black or white spots before alluded to. The former are seldom detrimental to the production of a good line, but they are unpleasant to the draughtsman, while the latter, or white spots may be termed rotten peth, on which it is quite impossible to engrave a line. Box-wood of large and quick growth is very liable to shrink between the rings, and when prepared, it is not easy to get it to a properly even surface. The largest box-trees are comparatively small in diameter, and before modern appliances were brought into action, it was difficult to get a square block equal in size to an ordinary octavo page, or seven inches by five, and at that time in order to increase the size, it was common to saw up the log in a slanting direction, so as to get larger pieces. A slice of wood cut in this manner resembled an oval; but this mode of cutting the wood up would not be very desirable for engraving, as the line produced would not be equal in sharpness and certainty, to that cut in the rectangular section of the tree. The logs should never be cut into slices till the moisture has been dried out, and in the treatment of wood when prepared, it should always be remembered that the material is still part of tree, and therefore subject to any sudden changes of extreme heat or cold, causing it to expand, or shrink, to warp, or split, and otherwise be productive of inconvenience. Water should be very sparingly used in the preparation for drawing upon, as it causes an expansion of the pores.

Owing to Mr. Wells' invention of jointed and amalgamated blocks, there is now no limit to the size of a wood-cut; and it is hardly possible at the present day to believe in the make-shifts of olden times when a block was required larger than a tree would give it in a single piece. Sometimes the pieces were glued together, at others held tight by a heavy iron chase; in both cases the printing from them was most unsatisfactory and always uncertain. It is now about thirty years since Mr. Wells turned his attention to the inconvenience of small and badly made-up wood for engraving, and by his invention thoroughly overcame all the difficulties of the natural size of the wood. The following summary will give an idea of what the log has to go through by the above invention, before it (the prepared block) comes into the engraver's hands. The log is, 1st. Sawn up into slices by steam machinery, which are then dried. 2nd. The slices are squared into sizes, as large as the round will permit. 3rd. The pieces are matched according to color and quality, and again dried. 4th. Pieces cut, planed up, drilled for bolts, and grooved. 5th. Pieces fixed together, surface put on, and block reduced to proper height. 6th. Surface is finished. 7th. squared up to the size required.

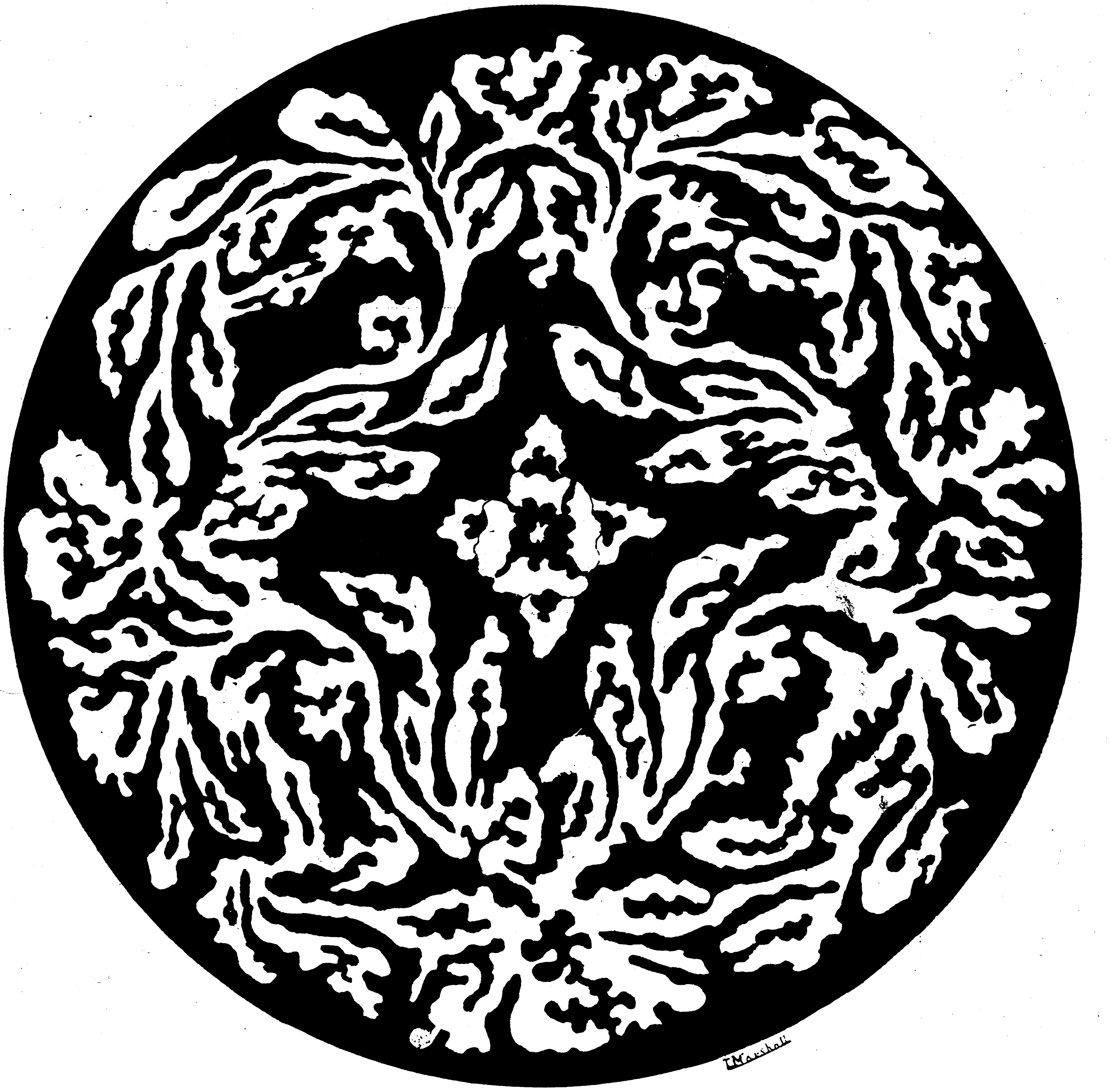


TABLE-TOP OR CENTER FOR MARQUETRY, ETC., BY LILY MARSHALL.

IN wood panels and cabinet work beautiful imitations of the finest specimens of black and gold marble may be produced. In the natural marble white veins are seen running in the deepest part of the black with small threads attached to them, and crossing each other, whilst yellow veins run in all directions. The imitation is effected by spreading gold and silver leaf where the yellow and white fibrous veins are intended to run. The whole surface is then painted over with black. When this coating is tacky a bodkin or similar instrument is employed to draw the color in small reticuled veins from off the gold and silver leaf. For the display of larger masses of the underground, the surface is to be wiped with wash leather on the point of the thumb or piece of wood. The veins are then to be painted respectively with ochre and white, heightened by the addition of a little vermillion. The work is subsequently covered with transparent varnish. The gold and silver on which the white and yellow tints are laid shine through with great brilliancy.